AGRI-FACTS
Practical Information for Alberta's Agriculture Industry

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Food Safety Concepts for Potato Producers

Potatoes are food. As obvious as this concept may seem, it may not be deep-rooted in the minds of some potato producers and their staff.

Contaminated potatoes–someone's dinner–can cause illness or injury to a consumer. The presence of physical contaminants can cause losses and equipment failure in processing and packing plants.

Fortunately, there are no documented cases of health problems arising from the consumption of 'contaminated' potatoes in Alberta. From time to time, packers and processors have experienced problems with metal objects and other foreign materials in potatoes.

Possible contaminants

In the process of growing, harvesting, storing and shipping, potatoes are exposed to many conditions that may result in food-safety problems. Three general types of contaminants can either reduce quality or actually make potatoes unsafe for consumers:

- **organisms**, such as bacteria, but also animals such as mice
- **objects**, (foreign materials) such as glass, metal, wood or plastic
- **chemicals**, such as disinfectants, cleaners, fuels or pesticides

Awareness, documentation of all practices and a safe-food attitude are important in ensuring food safety on the farm.

Contaminated potatoes can cause illness or injury to a consumer.

Preventing contamination by organisms

Possible contamination by microorganisms and other pests can be prevented. Here are some techniques to prevent such contamination from occurring:

- potato storages must be sanitized before potatoes are stored. Walls, floors, plenums and ducts should first be washed with water under high pressure and then a general storage disinfectant or bleach should be used.
  - storage cleaning records, which include date and materials used, should be kept. Name of the person doing the cleaning should also be recorded.
  - where diseases are known to be present in stored potatoes, trays containing disinfectant (foot baths) should be placed at storage entrances to reduce the risk of spreading diseases to other storages.
- animals such as mice, gophers, farm pets, and birds must be prevented from entering storages, so their excrement will not contaminate potatoes.
- all work and storage areas should have adequate toilet facilities, including hand-washing facilities that include liquid soap dispensers, warm water and disposable paper towels for drying. Staff must wash hands after using facilities.
- producers who have both livestock and potato production facilities should have separate footwear for each facility.
- if processing plants demand that potatoes be washed before delivery, the wash water should be clean and free of microbiological and chemical contaminants.

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- cull piles are a potential source of potato diseases and contamination of stored potatoes. Cull piles should be disposed of away from potato facilities as soon as possible.

Preventing contamination with foreign materials

- metal objects such as nuts, bolts and nails must be removed from storages before storing potatoes. Small metal objects can become embedded in individual tubers and pass undetected through grading facilities.
- if a grower suspects there could be foreign objects in potatoes, the packer or processor should be alerted. One small piece of metal can cause a costly plant shutdown. If undetected, it also becomes a safety hazard for consumers.
- glass cannot be detected with scanning devices in processing plants and is therefore a major concern.
- standard light bulbs should not be used anywhere in potato storages where glass could fall onto potatoes. Shatter-proof light bulbs should be used over grading lines and in storages, or protective shields must cover bulbs.
- broken glass in a storage complex must be cleaned up thoroughly.
- plastic film or small plastic objects are potentially as dangerous as metal and cannot be detected with the metal detectors common in processing plants.

Preventing contamination with chemicals

- chemicals should be stored in well ventilated areas away from storages. Pest control chemicals must never be housed in a potato storage or receiving area.
- a storage area should not be used as a shop or garage at any time.
- if vehicles are temporarily stored in potato storage and handling areas, all traces of grease and oils must be removed before storing or handling potatoes.
- all spilled chemicals, including oils, solvents, lubricants and cleaners, must be cleaned up thoroughly.
- if diesel or gasoline fumes are noticeable, the area must be thoroughly aired prior to storing potatoes.
- pre-harvest or processing intervals must be adhered to when applying pest control products and sprout inhibitors.
- only registered pest control chemicals can be used on potatoes in the field or in storage.
- sprayers or chemical applicators must be calibrated to ensure rates are accurate. Date of calibration should be recorded.
- thorough and accurate records should be kept for all fertilizers and pest control products applied to potatoes. Names of applicators should be recorded. Record books specifically for chemical applications are available from dealers and processors.
- records of products applied should include information such as:
  - fertilizer or chemical supplier
  - type of fertilizer and rate applied
  - pest control chemical names and rates
  - land locations where products are applied
  - dates of application
  - name and initials of the applicator

General practices to ensure a safe supply of potatoes

- ***documentation*** is key for a successful program and will help a producer in the event of a problem.
- all areas and facilities where potatoes are handled or stored must be generally ***clean and sanitary***.
- develop and maintain a "safe food" ***attitude*** on the farm.
- learn how to ***identify*** and ***control*** potential hazards on the farm.
- be ***aware*** of potential risks and constantly be on the lookout for hazards to food safety.
- ***develop a working environment*** in which staff are encouraged to make suggestions or point out potential risks to the safety of the potatoes grown and stored.

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